

Understanding reinsurance: How reinsurers create value and manage risk

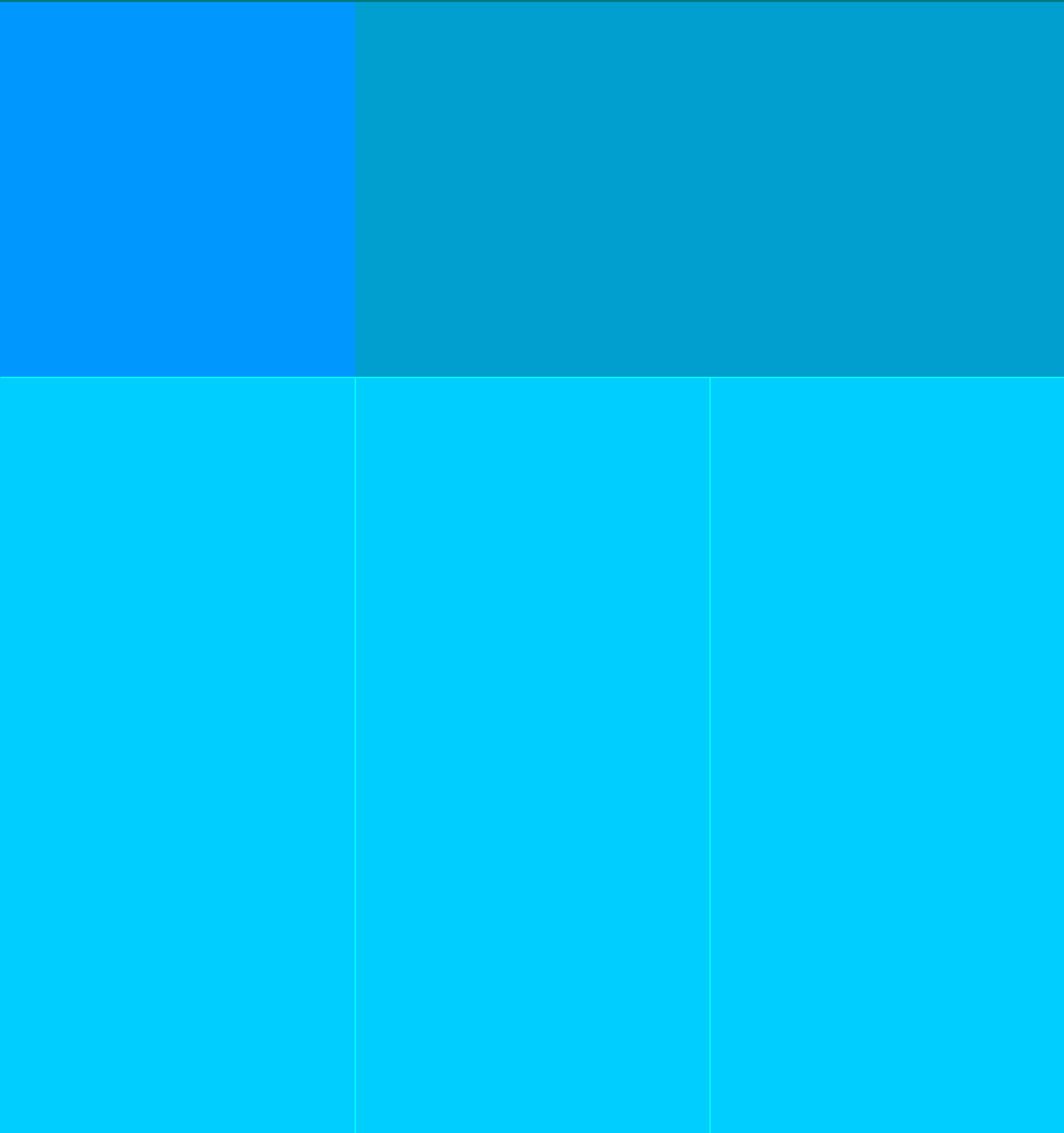


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Executive summary

Reinsurance is one of the major risk and capital management tools available to primary insurance companies. It is, however, hardly known outside the insurance sector. This paper contributes to the industry's efforts to explain the essentials of reinsurance to a broader audience. It describes the principles of life and non-life reinsurance, why insurers benefit from buying reinsurance cover and how reinsurers deal with risk. It concludes with an overview of the general framework needed for reinsurance to function efficiently.

Reinsurance is insurance for insurers. Insurers buy reinsurance for risks they cannot or do not wish to retain fully themselves. Reinsurers help the industry to provide protection for a wide range of risks, including the largest and most complex risks covered by the insurance system. Insurers also benefit from the capital relief that reinsurance provides and from reinsurers' product development skills and risk expertise. As such, reinsurance is an indispensable part of the insurance system that makes insurance more secure and less expensive. This is ultimately for the benefit of policyholders who get more protection at a lower cost.

As with insurance, reinsurance is fundamentally a promise to pay possible future claims against a premium today. Reinsurers apply sophisticated risk management processes to ensure that this promise can be honoured. These processes – including risk monitoring and modelling – guarantee that the capital base and the risks assumed are aligned. Reinsurers generally have a highly rated capital base: the majority of reinsurers are rated at least single 'A' with Standard & Poor's, and only few bankruptcies of reinsurers have been registered in the past.

Reinsurance is, by its nature, a global business which deploys capital across geographic boundaries and lines of business. To work effectively, it requires a reliable legal system which is secure and honours the freedom of contract. In addition, reinsurance needs a regulatory framework, which gives reinsurers market access to provide their services, allows free movement of capital and relies on capital requirements which recognise reinsurers' broad diversification across lines of business and geographies and their superior risk management capabilities.

What are the essentials of reinsurance?

What is reinsurance?

Reinsurance is insurance for insurers. It is an agreement between an insurer (cedent) and a reinsurer: the reinsurer agrees to indemnify the cedent against all or part of a loss which the ceding company may incur under certain policies of insurance that it has issued. In turn, the cedent pays a consideration, typically a premium, and discloses information needed to assess, price and manage the risks covered by the reinsurance contract.

Who offers reinsurance?

In its *Global Reinsurance Highlights*, 2004 edition, Standard & Poor's lists approximately 250 reinsurance entities in 50 countries. In addition, there is a large number of small companies, also including primary insurers, offering reinsurance. In 2003, premiums (cessions) amounted to USD 176 billion. Non-life reinsurance premiums accounted for USD 146 billion, which is equivalent to 13.7% of the premiums written by the global non-life primary insurance industry (see Figure 1 and Appendix 2 for detailed information). The corresponding premium figure for life reinsurance is roughly USD 30 billion or 1.9% of total life insurance premiums. The volume of life business ceded to reinsurers is lower than that of non-life as typically only mortality and disability risks are reinsured while the large proportion of savings business is retained by the primary insurers. The market share of the ten largest reinsurance companies is about 54% in terms of premium volume.

Shareholders' equity of the world's 40 biggest reinsurance groups amounted to about USD 249 billion in 2003, according to Standard & Poor's. The capital strength of reinsurers is generally above investment grade. Of the top ten reinsurance groups, six companies have a financial strength rating of at least 'AA-', as measured by Standard & Poor's, or "very strong financial security" with respect to their ability to pay under their policies and contracts in accordance with their terms. The stable and sound capital base of the reinsurance industry is also reflected in the small number of bankruptcies among reinsurance companies: between 1980 and June 2003, just 24 reinsurers failed. None of these was of substantial size: the affected premium volume accounted for only 0.24% of total cessions over this time.

Who buys reinsurance?

Reinsurers deal with professional corporate counterparties such as primary insurers, reinsurance intermediaries, multinational corporations and their captive insurers or banks. The majority of reinsurance clients are primary insurers, from all classes of insurance.

How much business an insurer will reinsure depends on the insurer's business model, its capital strength and risk appetite, and prevailing market conditions. In particular:

- Insurers whose portfolios are heavily exposed to catastrophic events – such as wind-storms, earthquake or floods – have a strong need for reinsurance cover.
- Small local players need more reinsurance coverage than larger international insurers who can diversify their insurance risks over a bigger client base.
- Insurers writing many different lines of business have a relatively better balanced portfolio than specialised insurers, which focus on few business lines or on selling to a specific customer group. Multiline insurers therefore need relatively less reinsurance cover.
- Commercial lines portfolios with a small number of risks with large exposures (such as aviation or utility industries) need more reinsurance than personal lines portfolios with a large number of small and homogenous risks (such as motor insurance).

Reinsurance premiums amounted to USD 176 billion in 2003.

The majority of the top ten reinsurers have a very strong financial strength rating

The business models of insurers define their reinsurance needs

- Life insurers with a greater proportion of contracts containing a mortality or disability risk element tend to cede more than life insurers with a high level of savings premiums.
- Insurers expanding into new products or entering new geographical regions often use reinsurance to benefit from reinsurers' expertise and financing. This is of particular importance in life reinsurance.
- Insurers exiting markets or lines of business often use run-off reinsurance to transfer to reinsurers closed books of business where liabilities continue to exist under the contracts.
- Regulatory and rating agency considerations also significantly influence the individual demand for reinsurance cover, as reinsurance is a means to provide capital relief and to improve balance sheet strength.

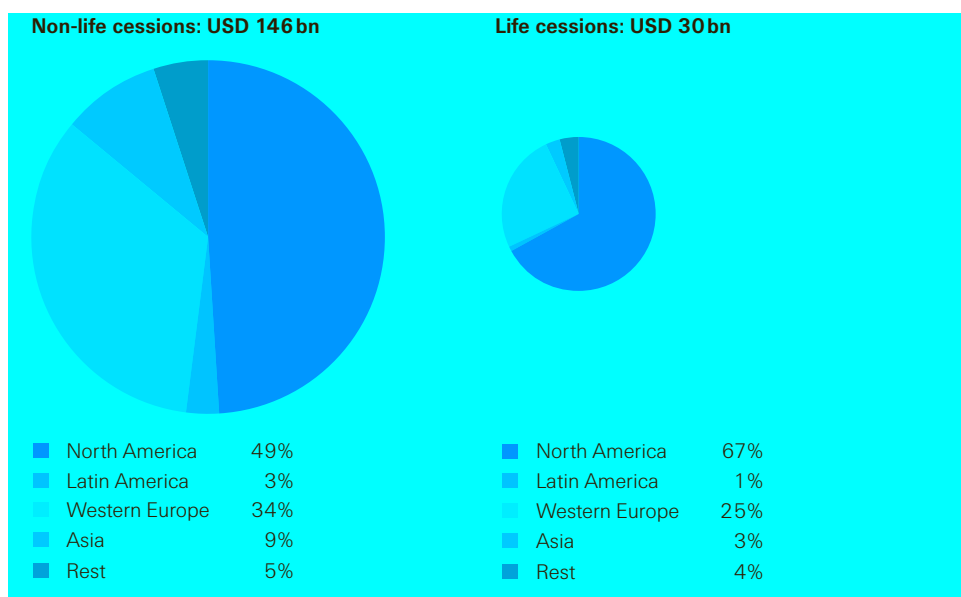
North America dominates the cession market

Geographical origin of cessions

Non-life reinsurance dominates the industry, comprising more than 80% of overall cessions (see Figure 1). Life reinsurance accounts for proportionally less than non-life because life products mainly consist of savings, which have a small insurance risk component and therefore are generally not reinsured. In non-life, the regional split of premiums shows that about half of all cessions originate from North America. Western Europe's share of cessions in 2003 was some 34%. The remaining 17% came mainly from Asia. In the life reinsurance market, the picture looks the same, although the dominance of North America is even more pronounced: two-thirds of all ceded premiums were written in this region, while Western Europe only accounted for 25% and the rest of the world for the remainder.

North America is dominant in non-life reinsurance due to its high exposure to natural hazards and the significance of heavily reinsured third-party liability insurance in the US. In life reinsurance markets in the US and the UK, a high proportion of mortality business stems from insurance companies preferring to focus on investment business.

Figure 1
Majority of cessions originated from North America in 2003



Source: Swiss Re Economic Research & Consulting

The main benefits of reinsurance are stabilisation of underwriting results, financial flexibility and expertise

Stabilisation of underwriting results is a dominant driver for non-life insurers to buy reinsurance

Benefits of reinsurance

Reinsurance has important benefits for primary insurers. It provides

- reduced volatility of underwriting results
- capital relief and flexible financing
- access to reinsurers' expertise and services, especially in the fields of product development, pricing and underwriting, and claims management.

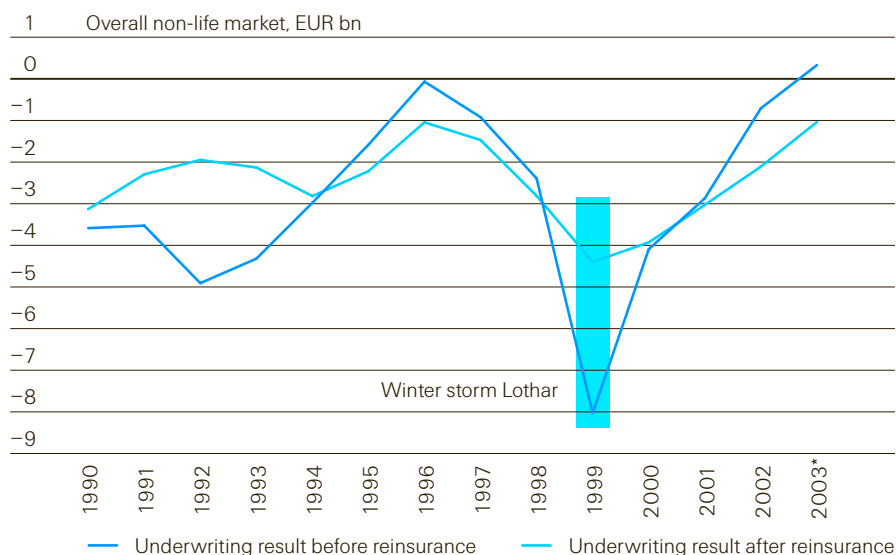
These benefits apply to both life and non-life insurance. However, due to the different focus, the importance of the different benefits varies for the respective sectors.

Non-life insurance: less volatile underwriting results and enlarged capacity

One of the foremost reasons for non-life insurers to buy reinsurance is to protect their capital base against large deviations from expected losses. This is most important in the event of major catastrophes. For instance, it was only due to reinsurance cover that the insurance industry did not experience severe distress and a possible wave of insolvencies when windstorms Lothar and Martin buffeted Europe in December 1999 or when floods washed over Central and Eastern Europe in August 2002.

Figure 2 illustrates how reinsurance has stabilised the net underwriting results, ie the result realised from insurance business after reinsurance, of French property and casualty insurers over the last decade. The beneficial effect of reinsurance was especially pronounced in the year of Winter Storm Lothar (1999). For an individual insurer, this smoothing effect can easily amount to 50% or more of its premiums.

Figure 2
The stabilising effect of reinsurance on French non-life insurers' underwriting results



* Data for 2003 are provisional

Sources: Supervisory authorities, Swiss Re Economic Research & Consulting

Reinsurance allows insurers to benefit from economies of scale

Another important benefit of reinsurance is that it allows non-life insurers to accept more business with the same amount of capital: by buying reinsurance coverage, insurers transfer risks to the reinsurers and consequently do not need to allocate capital for these risks. The ability to assume more risks, at the same level of capital, means that primary insurers can spread their overheads – the cost of distribution networks, administration and claims handling – over a broader base of business and thereby benefit from economies of scale.

Reinsurance expertise supports insurers in controlling their risks.

Reinsurers play an important role in assessing and underwriting risks, and in helping with the wording of contracts. In the past, reinsurers have been instrumental in ensuring the continued availability of insurance capacity in times of market distress. The growth and evolution of the Bermuda reinsurance market as a response to the US liability crisis of the mid-1980s – during which insurance premiums rose by up to 300 % and coverage became increasingly difficult to obtain – is a prime example.

Reinsurers also assist insurers' efforts to handle claims efficiently by bringing in their international and long-term experience. The involvement of reinsurers in claims handling can substantially contribute to mitigating and adjusting claims efficiently, to the benefit of insurers and policyholders.

Reinsurance provides long-term security as a benefit for primary life insurers

Benefits for life insurers: accumulation control, expertise and business financing

Life insurers buy reinsurance to minimise the potentially negative impact of large risks: for example, life insurers often want to limit their exposure to high sums assured for individual risks or to avoid an accumulation of mortality risks, particularly in the case of group cover schemes, which provide protection as part of many employee benefit packages throughout the world. Such protection contracts are especially common in Europe and Japan and help to stabilise insurers' earnings. Furthermore, long-term reinsurance contracts protect insurers against claims variation, for instance variations in mortality over time.

Benefiting from reinsurers' expertise is a major driver to buying life reinsurance

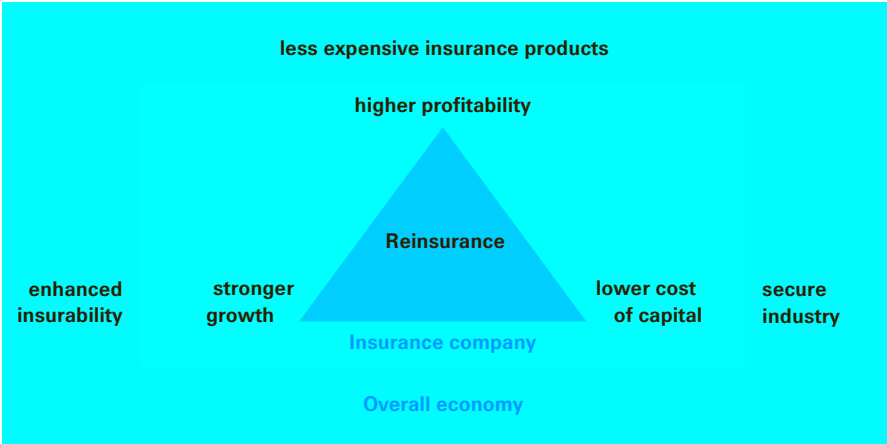
Life reinsurance arrangements are also frequently entered into in order to gain access to reinsurers' expertise on underwriting and claims management as well as pricing and product development. Reinsurers typically operate on a global basis and therefore have a broad and deep understanding of markets and their products, as well as data from a wide range of the insured populations. This allows reinsurers to assist primary insurers with superior underwriting tools, training for insurers' underwriters and other capabilities. The same applies to managing claims: guidelines on claims assessment and training are important benefits for insurers and also for the ultimate policyholder. Reinsurers' broad expertise also helps insurers to develop and price new products, for example to design products with more refined risk classes – smoker and non-smoker differentials are an example of this. This allows for innovation, while at the same time helping primary insurers to minimise possible risks arising from novel products. In markets where insurers predominantly focus on savings and investment business – for instance, in the UK and the US – life reinsurance allows primary insurers to transfer a, sometimes significant, proportion of the mortality and disability risk component of the policies, enabling them to concentrate on their investment activities.

Reinsurance helps to ease insurers’ capital strains

As in non-life business, the transfer of risk and the ability to benefit from reinsurers’ expertise allows life insurers to reduce their capital requirements and to use the freed-up capital to achieve other targets – for instance the expansion of business into new lines or geographical areas. Life insurance business places considerable demands on capital. Initial statutory reserves, solvency capital and commission can amount to several times the first year’s premium, particularly in the case of protection business. Reinsurance can help to ease this capital strain.

Figure 3
Micro and macro dimensions of reinsurance

Reinsurance makes insurance more stable and attractive



Reinsurance allows efficient risk and capital management

Ultimately, reinsurance allows primary insurers to manage their risks and capital in the most efficient way, making insurance more secure and less expensive (see Figure 3). At the same time, it broadens the range of products and coverage primary insurers can offer. Reinsurance enhances the stability of the primary insurance industry as it allows insurers to protect their balance sheets against unexpected adverse losses, understand assumed risks better and ensure correct risk assessment and pricing. As a consequence, insurers’ results become less volatile, reducing significantly the likelihood of a loss event depleting an insurer’s capital. Supervisors and rating agencies acknowledge the stabilising effect of reinsurance by giving primary insurers credit for reinsurance when they calculate their capital requirements.

Reinsurance facilitates economic growth and social welfare

Because reinsurance allows insurers to take advantage of economies of scale, insurers can use their capital more efficiently, allowing them to offer their policyholders the same level of security at a better price. In addition, without reinsurance, many large and complex risks would not be insurable. The ultimate benefits of reinsurance are not confined to the single primary insurer or the policyholder. By enabling innovation and ensuring that risk is held in the most efficient way among the different players in the economy, reinsurance forms an integral part of the insurance industry’s contribution to economic growth and social welfare.

How do reinsurers manage risks?

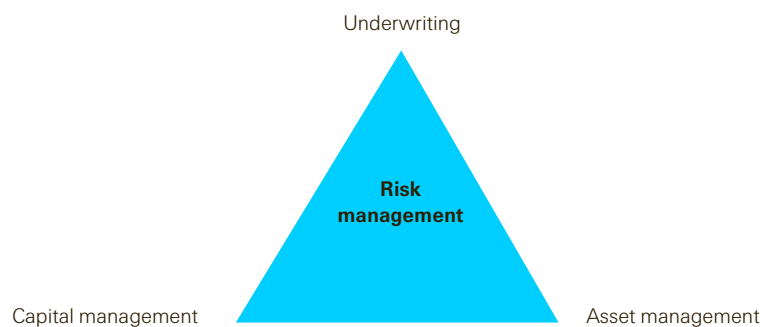
Risk management is the core competence of any reinsurer

Figure 4
Risk management is interactive

The concept of risk management

When insurers cede part of their business to reinsurers, they reduce their underwriting risk. In exchange, they assume counterparty credit risk – which is the risk that the reinsurer cannot honour its financial obligations. For the insurer it is, therefore, crucial that its reinsurers are financially secure.

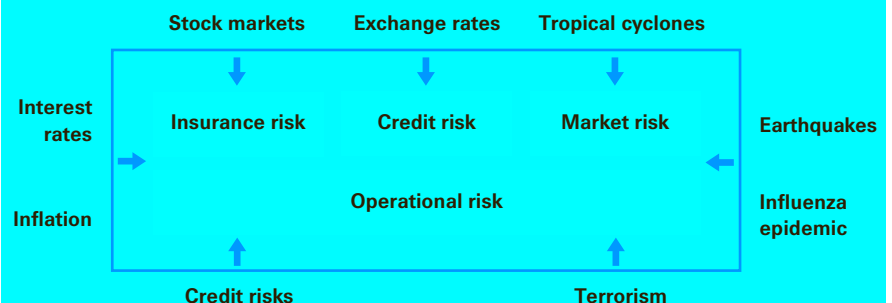
Reinsurers have implemented sophisticated risk management processes to ensure their ability to honour financial obligations. The overarching goal of risk management is to guarantee the long-term survival of the reinsurance company. The role of risk management is to identify, monitor and model the risks and their interdependencies and to ensure that risks are in line with what the company can bear. To meet its tasks, close cooperation with the underwriting units, asset management and capital management is key.



Risk modelling: the basis of risk management

In risk modelling, different forms of quantitative and qualitative analyses are applied. Figure 5 provides a list of risks affecting reinsurers. Based on the analysis of these risks, a sufficiently representative subset is chosen and mapped using stochastic models which take into account possible interdependencies among the various sources of risk. Finally, these models are used to quantify the impact of the risk factors on the reinsurer's balance sheet.

Figure 5
Which risks affect a reinsurer?



Exposure to non-modelled risks

Quantitative modelling has to be complemented by the analysis of risks which are less suited to formal modelling. These include socio-political risks, regulatory risks and most prominently operational risks. Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events such as fires and power failures. Internal guidelines and appropriate management processes are used to minimise such risks.

Underwriting is the first step to determining whether the reinsurer can bear the risk

Underwriting – assessment, capacity allocation and pricing

Underwriting¹ is the process of examining, classifying and pricing risks, for example a book of motor business, or a single risk that is submitted by the primary insurer for reinsurance, as well as concluding the contract for those risks which are accepted. (In the following text, for the sake of simplicity the term “risk” is used to connote both risk portfolios and single risks.) The main task of the underwriting process is to ensure that

- risks are assessed properly, and terms and conditions are adequate;
- the limits of assigned capacity are respected;
- there are controls for accumulation and peak risks, and
- pricing and wording are appropriate.

Information is key to assessing risks correctly

Risk assessment and terms and conditions

Risk assessment starts with assessing the data provided by the primary insurer and determining whether additional information about the characteristics of the insured objects or persons is required. In non-life reinsurance, this includes information about the location, the value and the exposure of the objects to the risk. For example, the exposure of individual buildings to flooding is assessed using flood zone maps, which show high-water levels, the speed of flow and other information. In life reinsurance, risk assessment will consider information that helps to determine the risk of death or illness, such as age, gender, smoker status, medical and lifestyle factors.

Terms and conditions are essential to making risks insurable

Only risks which meet the general conditions of insurability (see box) can be (re)insured. Terms and conditions under which the risks are insured have an important function in making risks insurable, as they limit the cover provided in such a way that the principles of insurability are met.

Principles of insurability

(Re)insurance can only operate within the limits of insurability. Insurability has no strict formula, rather it is a set of basic criteria which a risk must fulfill to be (re)insurable.

These criteria can be broadly classified as follows:

- **Assessability:** it must be possible to quantify the probability that the insured event will occur, as well as its severity, in order to calculate the potential exposure and the premium necessary to cover it. In addition, it must be possible to allocate the loss to a particular insurance period.
- **Randomness:** the time at which an insured event occurs must not be predictable, and the occurrence itself must be independent of the will of the insured.
- **Economic efficiency:** primary insurers and reinsurers must be able to charge a premium commensurate with the accepted risk.

Capacity limits determine which amount of risks can be accepted

Capacity allocation, accumulation control and peak risks

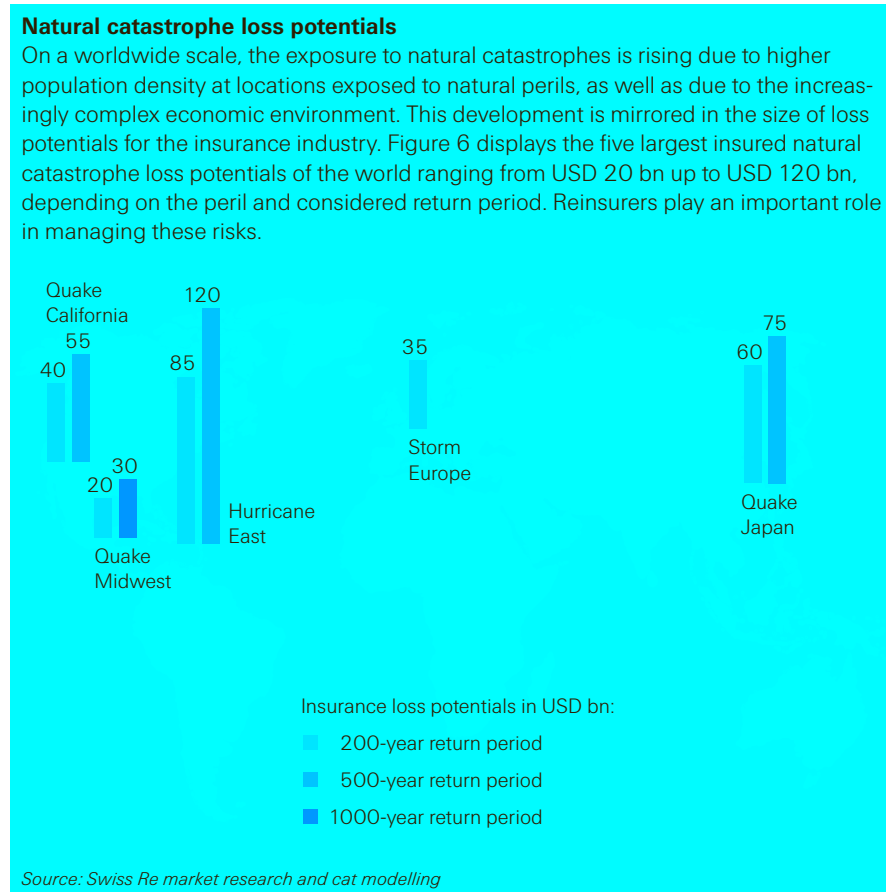
Reinsurers only accept risks if these are in line with the capacity limits they have set. Capacity is the maximum amount of coverage that can be offered by a reinsurer over a given period. In the case of risks with low accumulation potential, such as a portfolio of different fire policies, underwriters are generally able to commit a defined amount of capacity for a certain line of product and client/country. Risks demanding more capacity are typically escalated for special approval by senior underwriters or risk committees.

¹ For ease of reading, non-life terminology is used. In some instances, these terms, eg underwriting, do not have precisely the same meaning in life reinsurance. The underlying ideas are, however, the same.

Outstanding risks have to be identified

Some risks – especially in the field of natural perils – have a greater accumulation potential. Accumulation arises from dependencies between individual risks. This can be the concentration of risks, eg houses or cars, which may be affected by the same loss event, eg a wind storm, or a concentration of shares in the same large risk, eg a pharmaceutical firm, through different reinsurance treaties, making the reinsurer more exposed to a single loss occurrence. In order to control these risks successfully, it is important that they be identified and dealt with in the underwriting process. Capacity allocation is an important means to contain the exposure to accumulation risks: in a top-down process, capacity for a specific natural peril is allocated to specific markets (profit centres) and accumulation zones. Underwriting guidelines and clearing systems – which show the total of cover provided for a single risk within the whole company – are further means of containing exposure to accumulation and peak risks.

Figure 6
Five largest insured natural catastrophe loss potentials in USD bn, status 2004



The appropriate price for risks is based on claims experience and exposure

When the reinsurer and reinsured have agreed on the wording the risk is accepted in the reinsurer's portfolio

Asset management invests the premiums while taking into account guidelines and limits

Pricing and wording

The price has to be sufficient to cover the expected cost of acquiring the business, administering it and paying claims. Clearly the price must also provide the reinsurer with an appropriate return on the capital allocated to the risk. To arrive at a price, underwriters employ experience- and exposure-based models. Experience-based models use historical claims experience applied to the current situation. For such models to work, reliable and sufficient loss data are needed. Experience-based models are applied to price risks, eg fire risks – where a long history of incidents exists – or mortality risks where the pricing can be based on mortality tables and experience studies. When such data series are missing – for instance in the case of natural perils where events are relatively rare – the correct price has to be determined by using exposure-based modelling. These models use scientific information and expert opinion. Claims experience is only used to check and calibrate the model.

When the primary insurer accepts the price and the terms and conditions offered by the reinsurer, a contract is drawn up between the two parties. This document, often called a wording, describes the rights and duties of the contract parties, as well as the terms and conditions that accompany it. When agreement is reached, the risk is accepted into the reinsurer's portfolio (appendix 1 provides a basic description of the different types of property and casualty reinsurance contracts).

Insuring earthquake risks

Major earthquakes are high severity, low frequency risks, ie they occur relatively seldom, but when they do, they result in major damage. To be able to provide cover for such catastrophe risks, sophisticated risk modelling is required.

Reinsurers have played a major role in making earthquakes insurable: in the 1970s, after the earthquakes of Managua and Guatemala, a group of reinsurers and insurers founded CRESTA (Catastrophe Risk Evaluating and Standardising Target Accumulations). This organisation has since set standards on how to format and report natural perils policy information. The availability of more accurate and detailed risk exposure data together with improved technical capabilities has allowed exposure-based earthquake modelling capabilities to advance, and consequently enabled (re)insurers to provide more earthquake cover.

Asset management

Reinsurers invest the premiums they receive for providing reinsurance cover in the capital markets, a task assumed by asset management. Asset management is part of the risk management process as it delivers portfolio data to risk management and – as with underwriting – it has to respect limits and guidelines on where to invest. This is to ensure that assets are allocated in a way that matches the characteristics of the corresponding liabilities.

ALM offers systematic guidance on how risks interact

The coordinated management of both sides of the balance sheet is known as asset and liability management, or ALM. In the ALM process, information on liabilities must first be obtained. In doing so, quantifying currency exposure and payout patterns are of major importance. As a next step, the financial risk factors which affect liabilities have to be identified, namely changes in interest and exchange rates, equity or real estate prices, inflation and credit risks. Once these factors are identified, assets which match the characteristics of the liabilities are chosen.

Capital acts as a buffer against unexpected losses

Capital management

A reinsurer's capital has to be appropriate for its specific risk profile and appetite. Capital is needed for those adverse situations when payments exceed premiums and investment income, or when shocks from inadequate reserving or asset impairments, such as the severe stock market slump experienced in 2001–2003, have to be absorbed. Capital thus acts as a buffer against unexpected losses.

Capital and risks assumed have to be aligned

In the risk management process, capital management has the important task of aligning capital and risks assumed through insurance and investment activities. If risk monitoring reveals a gap between risk assumed and what can be borne by the existing capital base, either the necessary capital must be increased or underwriting and investment risks have to be reduced. The latter can be achieved by reducing underwriting and investment capacity or transferring the risks outside the company using retrocession or securitisation (see box).

Balancing retained and transferred risks

Reinsurers may wish to transfer some of the risks they have absorbed outside their company. For this, reinsurers can use either traditional retrocession agreements or capital market techniques such as securitisation.

Retrocession

Retrocession is the transfer of ceded premiums to other reinsurers or insurers. It provides reinsurers with a means of spreading their risks more broadly, but it does entail taking a credit risk. Counterparty assessment is crucial to ensure that the mitigation of underwriting risk is not offset by the assumed credit risk.

Securitisation

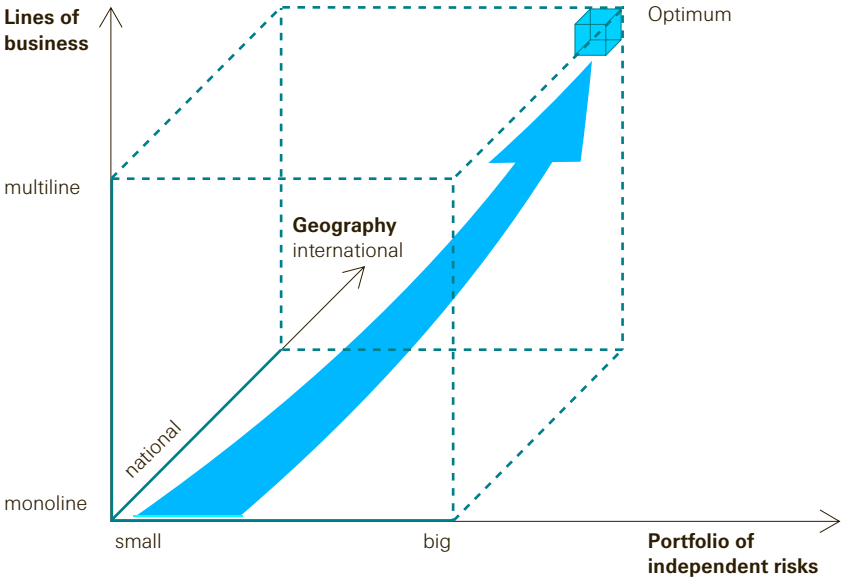
An alternative to retrocession is securitisation through which peak risks are transferred to the capital market in the form of securities. In the case of reinsurance, securitisation has been used for natural catastrophe exposures, such as hurricanes, windstorms and earthquake or extreme mortality risks such as lethal epidemics.

A well diversified portfolio is the cornerstone of the long-term success of a reinsurer

Diversification and risk management

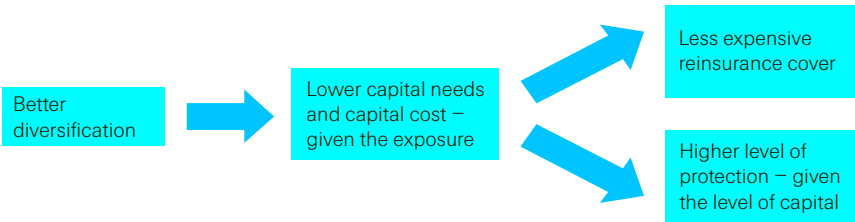
A well-established risk management process will result in a reinsurer’s portfolio where underwriting and investment risks are aligned with the capital available. This ensures the long-term survival of a reinsurer. In order to be successful in a competitive market, it is not only essential for a reinsurer to be secure, but also to manage this security efficiently, which is accomplished by diversifying risks. Reinsurers achieve a high degree of diversification by operating internationally, across a wide range of many lines of business, and by assuming a large number of independent risks (see Figure 7). Diversification across time also is an important factor. Risk management, which applies the previously mentioned processes of assigning capacity and setting up guidelines, also plays a role in this respect.

Figure 7
Dimensions of diversification



The basic principle behind diversification is the “law of large numbers”. This statistical principle states that the more independent risks are added to a reinsurer’s portfolio, the less volatile its results become. In terms of capital, lower volatility translates into lower capital needs and in turn lower capital costs, for the same protection level. Better diversified reinsurers therefore can offer reinsurance at lower price and – given the level of capital – provide a higher level of protection.

Figure 8
Diversification leads to a lower price for reinsurance



What framework is needed for reinsurance to fulfil its role?

Over the last 150 years, reinsurance has evolved as a means of coping with the growing number and increasingly complex nature of risks. Reinsurance can play its role only if certain basic conditions are met. These include

- freedom of contract and legal security
- the ability to provide reinsurance services internationally
- capital requirements that are relative to risk exposure

Legislation must not be retroactive

Freedom of contract and legal security

Reinsurance is based on contracts that determine which risks are covered. Freedom of contract is therefore an essential element for an efficient reinsurance market. Claims manifest themselves in the future. It is therefore important for reinsurers that the originally agreed contracts remain legally valid and that changes in law are not applied retroactively. If legal security is not given, the principles of insurability may no longer be met. This may mean that cover for certain risks can no longer be offered. Such a reaction was seen in the mid-1980s, when the US environmental superfund legislation introduced retroactive joint and several liability. This led to the withdrawal of a number of insurers and reinsurers from US liability business.

Market access and free flow of capital are key for global diversification to work

Allow international risk transfer and free capital flow

Reinsurers need to be active globally to be able to balance their portfolio. If this were not possible, they would not be able to absorb peak risk, as they could no longer benefit from the law of large numbers. A prerequisite for global scope is the ability of reinsurers to operate on a cross-border basis (freedom to provide services) in order to gain access to as many national reinsurance markets as possible. For international diversification to work, reinsurers also need the ability to use their worldwide premium income to pay local claims. Restrictions on the free flow of capital for reinsurers – as seen in several places in the form of deposit requirements – restricts reinsurers' ability to move capital to cover major events. Consequently, covers become more expensive than if capital flows were free.

Reinsurer's capital has to reflect its individual risk profile

Capital requirements which take into account reinsurers' particular characteristics

Capital requirements for reinsurers have been either the same as those of primary insurers or more liberal, taking into account that reinsurers deal with professional counterparties and not with individual consumers. Currently, there are several initiatives dealing with reinsurance regulation. One important project being the EU "Fast-track reinsurance supervision" directive; another which will impact the reinsurance industry in the medium term is "Solvency II". For reinsurance to preserve its benefits, it is important that regulation takes into account the characteristics of reinsurance – including its broad diversification across lines of business and geographies and its superior risk management capabilities. In general, regulatory capital requirements should cause as little market distortion as possible. In this context, initiatives which promote transparency and acknowledge reinsurers' risk models are preferable to capital requirements which do not take into account reinsurers' risk profile and their other specifics.

What lies ahead?

The reinsurance industry faces enormous challenges in the years ahead. The ever-changing risk landscape and regulators' and shareholders' demands for increasing transparency will require the industry to explain its operations in ever greater detail to the public. In this context, the reinsurance industry has to address the concerns expressed about the stability of the reinsurance sector. Its objective is to achieve a regulatory framework that preserves the confidence in the financial robustness of the industry while taking into account its unique characteristics.

Appendix 1: How do insurers transfer risks to reinsurers?

Reinsurers' products are designed to meet primary insurers' needs for balance sheet protection and capital relief. Usually a primary insurer will structure its reinsurance programme by making use of virtually all forms and types of contracts.

Traditional covers dominant

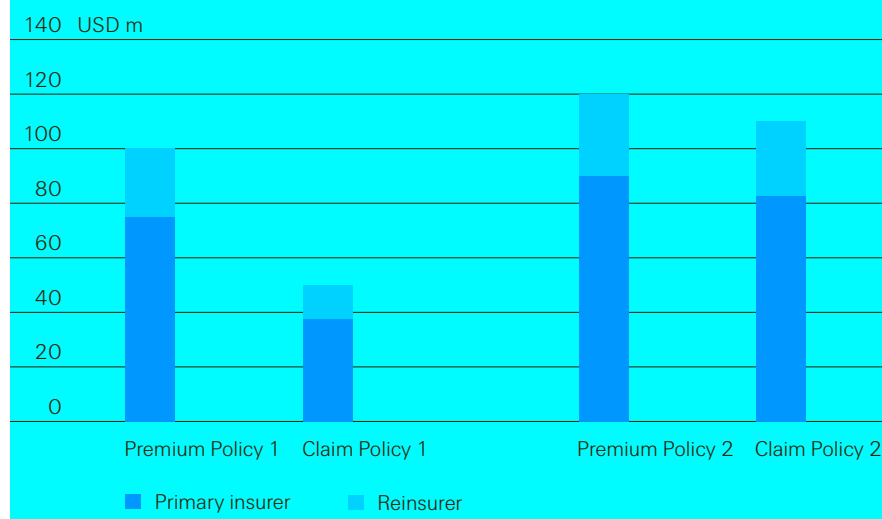
Traditional reinsurance contracts primarily accept insurers' underwriting risks in return for the payment of a reinsurance premium. These covers are closely linked to the original policies underwritten by the insurer, following their terms and conditions. There are two forms of traditional cover: treaty and facultative. Treaty reinsurance is used to reinsure entire, precisely defined portfolios. These contracts are dominant in both non-life and life reinsurance. Facultative reinsurance encompasses mainly large-scale risks that do not fit in the treaty portfolio and need to be individually evaluated and reinsured. In both forms, a distinction is made between proportional and non-proportional coverage (see box below). The types of contracts are the same for non-life and life reinsurance. What usually differs is the scope of the reinsurance contracts with regard to the time-frame. A non-life reinsurance contract is usually renewed every year, while a life reinsurance contract normally has the same contract period as the original policy written in the year the reinsurance was contracted.

Basic types of traditional reinsurance²

There are two basic types of traditional reinsurance: proportional and non-proportional.

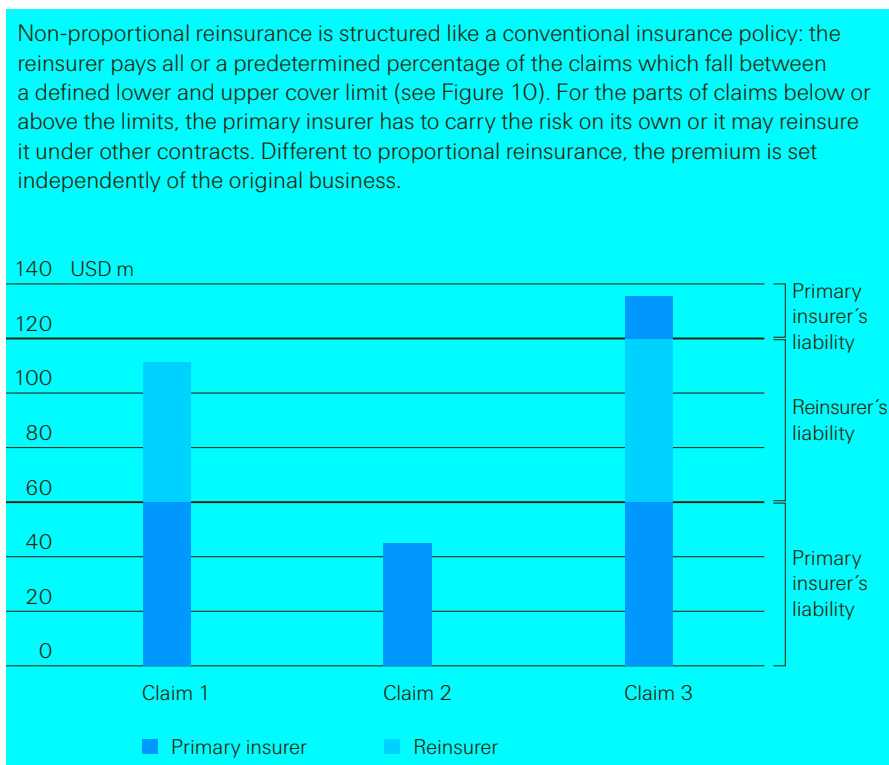
In all varieties of proportional reinsurance, the direct insurer and the reinsurer divide premiums and losses between them at a contractually defined ratio. The reinsurer's share of the premiums is therefore directly proportionate to its obligation to pay any claims. For instance, if the reinsurer accepts 25% of a particular portfolio of risks, and the direct insurer retains 75%, the premiums and claims are apportioned in the ratio of 25:75 (see Figure 9).

Figure 9
Proportional reinsurance



² For the sake of simplicity, the following explanations are confined to the most simple stylised idea about the basic types of traditional contracts. It is therefore abstracted, for example from acquisition costs, life risk premium business etc.

Figure 10
Non-proportional reinsurance



Non-traditional covers account for only a small part of overall reinsurance business.

In recent years, new risk transfer techniques have emerged, which are broadly summarised under the term 'alternative risk transfer' (ART). The most important instruments include finite reinsurance for both non-life and life reinsurance, and multi-year, multi-risk property/casualty contracts. Both types of contracts are natural extensions of traditional reinsurance.

- By their nature, finite contracts contain major profit (loss) sharing elements, which limit the risk transfer to the reinsurer. The origin of finite contracts goes back to the time of the US liability crisis of the mid-1980s. Finite reinsurance was designed to facilitate the transfer of certain risks which would have become uninsurable following the crisis.
- Under multi-risk/multi-year contracts, reinsurers commit to paying claims only if the accumulated losses for several different risks over an extended period (often three years) exceed a fairly high threshold. Premiums for these contracts are low, because they are generally designed to cover only those low frequency, high severity cumulative losses that could place excessive strain on insurers or large corporations. These kinds of contracts also reduce administration costs.

Premiums from non-traditional cover, predominantly finite reinsurance, account for 10–15 % of overall reinsurance premiums. However, the importance of non-traditional covers is substantially lower than implied by the 10–15 % share, because finite contracts usually contain a major capital management element.

Appendix 2: Statistical information about reinsurers

Volume of primary and reinsurance premiums worldwide in 2003*, USD bn

Primary insurers	Non-life insurance	Life insurance
Direct premiums	1069.4	1520.8
Reinsurers		
Ceded premiums ¹	146.0	29.5
Cession rate ²	13.7%	1.9%

* Provisional figures, estimates as of October 2004

¹ Cessions include only premiums to non-affiliated companies, estimates as of October 2004.

² The cession rate is defined as the ratio of ceded premiums divided by direct premiums.

Source: Swiss Re Economic Research & Consulting

Geographical origin of cessions

Non-life reinsurance premiums*, USD bn

	1990	1995	2000	2001	2002	2003
North America	25.48	35.73	48.64	58.14	66.37	71.90
Latin America	1.18	3.09	3.61	4.39	4.55	4.67
Western Europe	26.99	37.32	30.64	32.61	39.93	48.95
Asia	6.03	12.56	9.91	10.88	12.49	13.82
Rest	1.59	4.50	4.73	4.63	5.10	6.70
World	61.27	93.20	97.52	110.65	128.44	146.04

* The figures only include cessions to non-affiliated companies; all figures shown are estimates as of October 2004

Source: Swiss Re Economic Research & Consulting

Life reinsurance premiums*, USD bn

	1990	1995	2000	2001	2002	2003
North America	4.31	6.00	13.47	15.40	17.82	19.57
Latin America	0.12	0.41	0.95	0.88	0.41	0.40
Western Europe	2.64	4.06	4.56	4.85	5.55	7.50
Asia	0.25	0.59	0.72	0.72	0.81	0.91
Rest	0.48	0.60	0.72	0.75	0.81	1.11
World	7.79	11.66	20.42	22.60	25.40	29.50

* The figures only include cessions to non-affiliated companies; all figures shown are estimates as of October 2004

Source: Swiss Re Economic Research & Consulting

The ten biggest reinsurance groups* in 2003

	Reinsurance net premiums earned			Invested assets	Shareholders' equity	Financial Strength Rating
	Group	P&C	L&H			
	(USD m)	(USD m)	(USD m)	(USD bn)	(USD m)	S&P, as per 01/11/04
Munich Re	25 499	18 337	7 162	101.4	23 836	A+
Swiss Re	22 779	15 199	7 580	71.3	14 967	AA
GE Insurance Solutions	10 001	6 958	3 043	29.2	7 943	A+
Hannover Re	9 181	7 001	2 180	17.6	3 033	AA-
Gen Re	8 245	6 398	1 847	24.2	8 146	AAA
Berkshire Hathaway Re	4 430	4 430	0	na	na	AAA
Scor	4 162	2 638	1 524	7.7	781	BBB+
Converium	3 677	3 294	383	7.5	2 083	BBB+
PartnerRe	3 503	3 203	300	6.2	2 594	AA-
Transatlantic Re	3 171	3 171	0	6.7	2 377	AA

* Incorporated professional reinsurers only, excluding Lloyd's

Invested assets = stated investments excl cash & cash equivalents and deposits held at ceding companies

Shareholders' equity as stated

Gen Re and **Berkshire Hathaway Re**: combined net premiums earned of USD 12 675 m in 2003

Munich Re: premiums for reinsurance activities only, including intra-group transactions of USD 1.1 bn in P&C and USD 1.1 bn in L&H; invested assets for reinsurance activities only; shareholders' equity for Munich Re Group

Swiss Re: P&C figures include P&C Business Group and premium business of Financial Services Business Group

Scor: French GAAP; pro-forma shareholders' equity including capital raised on 7 January 2004 (EUR 751 m) would have been USD 1 690 m

Source: Swiss Re based on company reports; Financial Strength Rating from Standard & Poors'

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- Further publications about (re)insurance are available from "Research & Publications" on the Swiss Re website: <http://www.swissre.com>

Interesting websites

- European Union, Financial Services:
http://europa.eu.int/comm/internal_market/finances/index_en.htm
- Insurance Information Institute, New York, US: <http://www.iii.org>
- International Accounting Standards Board: <http://www.iasb.org>
- International Association of Insurance Supervisors, Basle, Switzerland:
<http://www.iaisweb.org>
- International Insurance Society: <http://www.iisonline.org>
- National Association of Insurance Commissioners: <http://www.naic.org>

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